



Curriculum Units by Fellows of the National Initiative
2026 Volume VI: Asking Questions in Biology

Heart Rate Detectives: Exploring Human Biology Through Data and Inquiry

Guide for Curriculum Unit 26.06.02, published September 2026
by Stephanie Hooks

Heart Rate Detectives is an inquiry-based unit on the heart and how exercise impacts heart rate and the health of the heart. This unit is geared toward teaching 5th- or 6th-grade students; however, it could be adapted to teach older students learning about mathematical data or biology. The unit begins with a brief history of medical science and research that has led to our understanding of the heart and how it works. Some of this research dates back to Ancient Egypt and Ancient Greece. The unit will give the reader background on the anatomy of the heart and how it works. It also explores historical implications in medical research and the impact that this has had on minority groups. The instructional components of the unit include inquiry-based, student-centered, practical activities that give students the opportunity to measure their resting heart rate and understand how it varies after exercise. Students will have the opportunity to make meaning of the data using statistical measures such as calculating measures of center and plotting the data on a stem and leaf plot or a line plot. In addition, students will conduct research to deepen their understanding of the science behind heart rate.

(Developed for Math and Science, grade 5; recommended for Math and Science, grades 5-6)

<https://teachers.yale.edu>

©2026 by the Yale-New Haven Teachers Institute, Yale University, All Rights Reserved. Yale National Initiative®, Yale-New Haven Teachers Institute®, On Common Ground®, and League of Teachers Institutes® are registered trademarks of Yale University.

For terms of use visit https://teachers.yale.edu/terms_of_use